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**JUN 12 2008***Application No. 10/506,444**Amendment A**Reply to Office Action of December 13, 2007***REMARKS**

The Office Action of December 13, 2007 has been fully considered. In view of the above amendments and the following remarks, reconsideration of the application is respectfully requested.

Applicants submit the amendments do not raise new issues for consideration.

**The Office Action**

Claims 1-2 and 4-5 were rejected under 35 U.S.C. §102 as being anticipated by Sugishima et al. (JP 08-257402).

Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over Sugishima et al. (JP 08-257402) as applied to claim 1 and further in view of Inoue et al. (US 4,221,768).

Claim 6 was rejected under 35 U.S.C. §103(a) as being unpatentable over Sugishima et al. (JP 08-257402) as applied to claim 5 and further in view of Shibata (US 4,931,421).

Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Sugishima et al. (JP 08-257402) as applied to claim 5 and further in view of Kato et al. (US 5,087,600).

**The Specification**

Claim 1 has been amended. The amendment to claim 1 is fully supported in the specification on page 5, line 25 to page 6, line 12. It is further supported in Examples 1 to 3 of the present invention on pages 13 and 14 of the specification.

In view of Applicants amendments to the abstract and claims, it is respectfully submitted that the specification is now in compliance with 37 CFR 1.52 (a) and (b). However, if the Examiner is not in agreement, it is requested she contact Applicants' counsel so that Applicants can take the appropriate corrective action.

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### **Oath/Declaration**

The Examiner found that Applicants' Declaration to be defective. A new Declaration which correctly identifies the claim for foreign priority and that is in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is being submitted herewith after page 13 of this Amendment.

### **Claims 1-2 and 4-5 Are Not Anticipated Under 35 U.S.C. §102 by Sugishima et al. (JP 08-257402).**

With regard to claim 1, the Examiner states Sugishima teaches a method for producing a nitrogen oxide removal catalyst including dispersing a hydrated titanium oxide or dried material thereof, tungstic acid or a salt thereof (Detailed Description, lines 0010-0011 and 0014), and cerium dioxide (Detailed Description, lines 0010-0011 and 0015) in a dispersion medium to form a sol-like material, mixing the sol-like material with an aqueous medium to form a catalyst slurry or paste (Detailed Description, lines 0011-0012 and 0016-0022), supporting the catalyst slurry of past on a catalyst carrier (Detailed Description, lines 0024-0026), and then calcinating the carrier (Detailed Description, lines 0010-0022)

With regard to claim 2, the Examiner states Sugishima teaches a method for producing a nitrogen oxide removal catalyst wherein a colloidal silica is further mixed to form the catalyst slurry (Detailed Description, lines 0024-0025).

With regard to claim 4, the Examiner states Sugishima teaches a method for producing a nitrogen oxide removal catalyst wherein inorganic short fibers are further mixed to form the catalyst slurry (Detailed Description, line 0025).

With regard to claim 5, the Examiner states Sugishima teaches a method for producing a nitrogen oxide removal catalyst wherein the catalyst carrier is an inorganic fiber catalyst carrier, ceramic catalyst carrier, or metal catalyst carrier (Detailed Description, line 0025).

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently. MPEP § 2131 In particular, the instant amended claim 1 and claims 2 and 4-5 teach that a sol of cerium oxide is coexisting with titanium and tungsten compounds. Once formed it is precipitated and calcined (Detailed

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Description, page 6, lines 13-24). The method of the present invention prevents titanium dioxide crystals from being in contact with one another. This allows for a catalyst with high activity in comparison to a zeolite where cerium ions are dispersed by an ion exchange method (Detailed Description, page 6, lines 13-24). The Examiner suggests that each and every element of the present invention was set forth by Sugishima. However, the present invention disclosed Sugishima as prior art (Background, page 2, lines 19 - 23) in which a denitration catalyst was prepared by co-precipitating soluble compounds of titanium, tungsten and cerium where the particles of the cerium compound are highly dispersed in titanium. It was further disclosed the problems associated with methods for preparing a catalyst by co-precipitating soluble compounds of titanium, tungsten and cerium. These compounds such as cerium oxide become embedded in a titanium compound thereby preventing excellent activity, making filtration of the gel-like state difficult, higher production costs, etc. (Background, page 3, lines 12 through page 4, line 14). Therefore, for at least these reasons, Sugishima does not anticipate amended claim 1, claims 2 and 4-5.

**I. Claim 3 Is Not Rendered Obvious Over Sugishima in further view of U.S. Patent No. 4,221,768 to Inoue.**

According to the Examiner, Sugishima does not teach a method for producing a nitrogen oxide removal catalyst wherein oxalic acid is further mixed to form the catalyst slurry. Inoue teaches a process for producing a titanium oxide/silicon oxide catalyst for removing nitrogen oxides in wherein oxalic acid is further mixed to form the catalyst slurry (Detailed Description, paragraph 0023). The Examiner further states it would have been obvious to one of ordinary skill in the art to modify the process taught by Sugishima with oxalic acid as taught by Inoue in order to acidify the catalyst slurry and obtain a catalyst suitable for purifying exhaust and waste gases (Detailed Description, paragraphs 0001 and 0023).

Not all claim limitations are met. MPEP § 2143.01 In particular, the instant claims recite while oxalic acid is not necessarily required (Detailed Description, page 10, line 25), specific performance characteristics result when 5 to 10% by weight of oxalic acid

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based on the weight of titanium oxide is added. This amount activates the surface of titanium oxide to accelerate the reaction with tungstic acid (Detailed Description, page 11, line 4-7) increasing the activity of the catalyst. The instant claims further teach that a sol of cerium oxide is coexisting with compounds of titanium and tungsten. Once formed it is precipitated and calcined. The Examiner reasons that Sugishima's process in combination with oxalic acid as taught by Inoue would have the performance characteristics of the instant claims. This is incorrect. Sugishima does not teach mixing oxalic acid to form the catalyst slurry and the process teaches away from the present invention in which a denitration catalyst is prepared by co-precipitating soluble compounds of titanium, tungsten, and cerium. Shibata does teach a catalyst prepared by a described method and is added to an aqueous solution acidified with oxalic acid or hydrochloric acid which additionally includes a vanadium compound (column 4, lines 51-53). The recited references do not show that a catalyst suitable for purifying exhaust and waste gases requires the combination of the instant claims. The Examiner has not shown that it is these recited methods which are necessary for a suitable catalyst. Therefore, the instant claims are non-obvious. Applicants request withdrawal of the 103(a) rejection based on Sugishima and Inoue.

**II. Claim 6 Is Not Rendered Obvious Over Sugishima As Applied to Claim 5 In further view of U.S. Patent No. 4,931,421 to Shibata.**

The Examiner states Sugishima teaches an inorganic fiber catalyst carrier (Detailed Description, paragraph 0025), a silica alumina support (Detailed Description, paragraph 0025), and a honeycomb or corrugated plate catalyst carrier shape (Detailed Description, paragraph 0026). The Examiner further states Sugishima does not specifically teach a method for producing a nitrogen oxide removal catalyst wherein the inorganic fiber catalyst carrier is a corrugated honeycomb carrier prepared by subjecting a sheet of silica-alumina type inorganic fibers to a corrugating processing. The Examiner states Shibata teaches a corrugated honeycomb carrier prepared by subjecting a sheet of alumina coated pipe-like substrates to a corrugating processing (Detailed Description, paragraph 36-38). The Examiner further states it would have

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been obvious to one of ordinary skill in the art to modify the process taught by Sugishima with the corrugated honeycomb carrier taught by Shibata in order to obtain a catalyst carrier which has gas permeability in at least one direction and which is useful to purify various combustion gases (Detailed Description, paragraph 71).

Not all claim limitations are met. MPEP § 2143.01 In particular, the instant claims recite a corrugated honeycomb-like catalyst carrier made of inorganic fibers including immersing the carrier in a slurry containing 30 to 60% by weight of catalyst components so that the catalyst slurry is filled in the gaps between fibers and coated on the surface of the carrier thereby increasing the activity of the catalyst. The Examiner reasons that Sugishima's process in combination with the corrugated honeycomb carrier taught by Shibata would have the performance characteristics of the instant claims. This is incorrect. Sugishima teaches a catalyst carrier prepared from various materials. Sugishima further teaches "there is no restriction in particular about shape of a nitrous oxide removal catalyst (carrier carried catalyst is also included) concerning this invention. The shape can be honeycomb, tabular, cylindrical shape, a ribbon base, pipe shape, etc., and any granular may be sufficient" (Detailed Description, paragraph 0026). Shibata specifically teaches pipe-like substrates are first bundled together, coated with alumina, and the heat treated under given conditions, thereby obtaining a honeycomb catalyst carrier (column 8, lines 19-22). The recited references do not show that a catalyst suitable for purifying exhaust and waste gases requires the combination of the instant claims. The Examiner has not shown that it is these recited methods which are necessary for a suitable catalyst. Therefore, the instant claims are non-obvious. Applicants request withdrawal of the 103(a) rejection based on Sugishima and Shibata.

**III. Claim 7 Is Not Rendered Obvious Over Sugishima As Applied to Claim 5 in further view of U.S. Patent No. 5,087,600 to Kato.**

The Examiner states Sugishima does not teach a method for producing a nitrogen oxide removal catalyst wherein the metal catalyst carrier is a metal lath. The Examiner further states Kato teaches a metal lath as a metal catalyst carrier in a process for producing a denitration catalyst (column 6, lines 15-35 and column 9, lines

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34-39). Therefore, it would have been obvious to one of ordinary skill in the art to modify the process taught by Sugishima with the metal lath taught by Kato in order to obtain a catalyst having high strength and resistance to poisons (abstract).

Not all claim limitations are met. MPEP § 2143.01 In particular, the instant claims recite when a metal catalyst carrier is used and the mesh size is small, included is a method in which a paste prepared by adding inorganic fibers in a catalyst paste containing 30 to 35% by weight of water is applied on the net-like product by using a roller so as to fill the meshes thereby resulting in a catalyst having high strength and resistance to poisons (page 10, lines 26-27 and page 11, lines 1-4). The Examiner reasons that Sugishima's process in combination with the metal lath taught by Kato would have the performance characteristics of the instant claims. This is incorrect. Sugishima does not teach a method for producing a removal catalyst wherein the metal catalyst carrier is a metal lath. Kato does teach a metal lath as a metal catalyst carrier but includes adding water and kaolin inorganic fibers in only 15% by weight to obtain a paste, pressure-applying the paste by means of rolls onto a metal substrate (column 6, lines 27-29). The recited references do not show that a catalyst having high strength and resistance to poisons requires the combination of the instant claims. The Examiner has not shown that it is these recited methods which are necessary for a suitable catalyst. Therefore, the instant claims are non-obvious. Applicants request withdrawal of the 103(a) rejection based on Sugishima and Kato.

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### CONCLUSION


For the reasons detailed above, it is respectfully submitted all claims remaining in the application amended claim 1 and 2-7 are now in condition for allowance. No further search or examination is believed to be required.

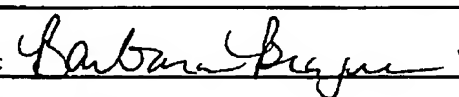
If the Examiner considers personal contact advantageous to the disposition of this case, he is hereby authorized to call Richard J. Minnich, at telephone number 216-861-5582, Cleveland, OH.

Respectfully submitted,

FAY SHARPE LLP

June 12, 2008  
Date

  
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<input checked="" type="checkbox"/> transmitted to the USPTO by facsimile in accordance with 37 CFR 1.18 on the date indicated below.	
Express Mail Label No.:	Signature: 
Date: June 12, 2008	Name: Barbara Brazier

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